

foam by spraying liquid 16 containing a foaming agent onto screen 19, which comprises a net or open mesh textile fabric. (Pg. 2, lines 23-34). O'Dell teaches that the "flow of gas through nozzle 14 from the end 13 forms at the screen 19 a high expansion foam which passes out of the open end of the nozzle 14." (Pg. 2, lines 32-34). In other words, nozzle 14 cannot be said to teach a mixing means for producing a discharge in the form of a two-phase mixture comprising *a suspension of droplets of mist in pressurized gas*, but can only be said to teach producing a discharge of *foam*, which is a mass of bubbles of gas suspended in a liquid (i.e., the opposite of droplets of liquid suspended in gas). When determining whether a claim is obvious, an examiner must make "a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art." In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, "obviousness requires a suggestion of all limitations in a claim." CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003)(citing In re Royka, 490 F.2d 981, 985 (C.C.P.A. 1974)). Because O'Dell does not teach or suggest all the limitations of independent claims 4, 5, 12, 18, 24, and 32 (even when combined with Yonnet, which is not cited for the limitation at issue), it is respectfully submitted that these claims are not obvious in view of the prior art. Accordingly, for at least the reasons discussed above, claims 3, 7, and 9 (dependent from claim 5), claims 13, 14, and 30 (dependent from claim 4), claims 25, 26 and 31 (dependent from claim 18), and claim 33 (dependent from claim 32) are also not obvious.

B. One skilled in the art would not have been motivated to combine the prior art in the manner claimed

It was conceded in the Office Action that O'Dell does not teach all the limitations of the independent claims. With regard to independent claim 4, it was conceded that O'Dell does not teach the limitation requiring means in the first path for automatically adjusting the mass flow rate of the liquid extinguishing agent as a function of the applied pressure of the pressurized gas so as to control the ratio of the mass flow rate of the liquid extinguishing agent in the first path to the mass flow rate of the pressurized gas in the second path towards such a value as to tend to produce a

constant droplet size distribution in and for substantially the duration of the discharge. Nonetheless, it was asserted that it would have been obvious to one of ordinary skill in the art to add the control valve of Yonnet to the invention of O'Dell, and to locate it in the first path and have its control port be connected to the second path so as to allow for the flow of the fluid in the first path to be dependent on the pressure of the fluid in the second path. With regard to independent claim 5, it was asserted that it would have been obvious to one of ordinary skill in the art to add the control valve of Yonnet to the first path in O'Dell and have its control port be connected to the third path so as to allow for the flow of the fluid in the first path to be dependent on the pressure of the fluid in the second path. With regard to independent method claims 18, 24, and 32, it was asserted that the device of O'Dell as modified by Yonnet would inherently perform all the steps and methods of the claims.

However, "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007), quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The Examiner must "identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does." *Id* (emphasis added). In the Office Action, it was stated that the modification of O'Dell with the valve of Yonnet "would allow for the flow of the fluid in the first path to be dependent on the pressure of the fluid in the second path, as taught by Yonnet." However, this statement is conclusory, and does not provide a rational, articulated reasoning for why a person of ordinary skill in the art would have been motivated in the first place to combine the valve of Yonnet with the device of O'Dell in the way the claimed invention does. The claimed invention requires controlling the ratio of the mass flow rate of the liquid extinguishing agent in the first path to the mass flow rate of the pressurized gas in the second path *towards such a value as to tend to produce a constant droplet size distribution in and for substantially the duration of the discharge*. Although Yonnet teaches a variable orifice valve controlled by gas pressure, this alone does not provide an articulated reasoning of why a person having ordinary skill in the art

would have been motivated in the first place to use the valve of Yonnet in the device of O'Dell in the manner claimed.

Furthermore, one having ordinary skill in the art would not have been motivated to put the variable orifice pressure-controlled valve of Yonnet into the apparatus of O'Dell because O'Dell is not concerned with controlling droplet size distribution in a stream of gas over the duration of discharge. As discussed previously, O'Dell is only concerned with production of a foam plug in nozzle 14, which is achieved by spraying liquid containing a foaming agent onto screen 19 where it interacts with gas to generate foam by trapping gas inside the liquid. Therefore, O'Dell does not teach and is not concerned with maintaining a constant liquid droplet size suspended in a stream of gas. Consequently, there is no reason why one of ordinary skill in the art would have been motivated to modify the foam generating extinguisher of O'Dell with the valve of Yonnet in the manner claimed for controlling the ratio of the mass flow rate of the liquid extinguishing agent in the first path to the mass flow rate of the pressurized gas in the second path towards such a value as to tend to produce a *constant droplet size distribution* in and for substantially the duration of the discharge.

CONCLUSION

In view of the foregoing, it is respectfully submitted that claims 3-5, 7, 9, 12, 13, 14, 18, 24-26, and 30-33 are in condition for allowance. Notice to that effect is respectfully requested.

The Commissioner is hereby authorized to charge any additional fee required under 37 C.F.R. 1.16 and 1.17 and credit any overpayments to Deposit Account No. 11-0982.

Respectfully submitted,

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Date: 7/6/2010

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